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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,077	06/15/2001	Claus Neubauer	2001P10813 US	8809

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Siemens Corporation
Intellectual Property Department
186 Wood Avenue South
Iselin, NJ 08830

EXAMINER

COUSO, JOSE L

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,077

Applicant(s)

NEUBAUER ET AL.

Examiner

Jose L. Couso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-13 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8 and 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakano et al. (U.S. Patent No. 3,803,553).

With regard to claims 1 and 14, Nakano describes capturing a binary image of the object (see figure 2, elements 2, 3, 4, 5, 6, 7 and 8, figure 6, elements 58, 59, 60 and 61, and refer for example to column 4, lines 57 through column 5, line 21 and to column 11, lines 36-39); determining a projection of the binary image to a first axis (see figures 1a-b and refer for example to column 3, lines 17-47); determining a difference between a profile of a target object to the first axis and the projection at a plurality of positions along the first axis (refer for example to column 4, lines 5-22); and detecting the object by determining if the difference between the profile and the projection is less than a threshold at one of the plurality of positions (refer for example to column 4, lines 22-55).

As to claims 2 and 15, Nakano describes determining a projection of the binary image to a second axis prior to determining the position and orientation (see figures 1a-b and refer for example to column 3, lines 17-47).

In regard to claims 3 and 16, Nakano describes determining a difference between a profile of the target object to the second axis and the projection of the image

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to the second axis at a plurality of positions along the second axis, wherein the differences are limited to the position determined along the first axis to have the difference below the threshold, and detecting the object by determining if the difference between the profile to the first axis and the projection to the first axis is less than a threshold at one of the plurality of positions (refer for example to column 4, lines 5-55).

With regard to claims 4 and 17, Nakano describes determining a pixel-by-pixel difference between a binary image of the target object used to determine the profile and the binary image of the object limited to the positions having the differences below the threshold along the first and second axes (refer for example to column 4, lines 5-55 and to column 8, line 7 through column 9, line 27, the latter discusses the shifting of the register so that a pixel-by-pixel difference is obtained).

As to claims 5 and 18, Nakano describes determining a pixel-by-pixel difference between a binary image of the target object used to determine the profile and the binary image of the object limited to the position having the difference below the threshold (refer for example to column 4, lines 5-55 and to column 8, line 7 through column 9, line 27, the latter discusses the shifting of the register so that a pixel-by-pixel difference is obtained).

In regard to claims 6 and 19, Nakano describes wherein the image includes a plurality of objects (as clearly illustrated for example in figures 1a-b and refer for example to column 9, lines 44-62).

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With regard to claims 7 and 20, Nakano describes wherein the method is performed for multiple target objects, each target object corresponding to at least one profile (as clearly illustrated for example in figures 1a-b).

As to claims 8 and 21, Nakano describes wherein each profile includes a corresponding orientation of the target object which is defined as the orientation of the object in the image upon detecting the object (see figure and refer for example to column 15, lines 31-52).

3. Claims 9-13 are allowed.

4. The following is an examiner's statement of reasons for allowance: The prior art of the record fail to teach or suggest singly and/or in combination a method of detecting an object comprising the steps of illuminating the object from behind as viewed by a camera, capturing an image of the backlight object using the camera, determining projections to a first and second axes, determining a difference between a profile of a target object to the first axis and the projection to the first axis at a plurality of positions along the first axis, detecting the object by determining if the difference between the profile to the first axis and the projection to the first axis is less than a threshold at one of the plurality of positions, determining a difference between a profile of a target object to the second axis and the projection to the second axis at a plurality of positions along the second axis, wherein the differences are limited to the position determined along the first axis to have the difference below the threshold, and detecting the object by determining if the difference between the profile to the first axis and the projection to the

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first axis is less than a threshold at one of the plurality of positions as prescribed for in the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Giger et al. and Hsu both disclose systems similar to applicant's claimed invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose L. Couso whose telephone number is (703) 305-4774. The examiner can normally be reached on Monday through Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8576.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jlc
June 29, 2004


JOSE L. COUSO
PRIMARY EXAMINER